

# Perioperative Antibiotic Prophylaxis

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**Prepared by the Montefiore Antimicrobial Stewardship Program & Department of Pharmacy.** This tool complies with national guidelines and regulatory guidance. ONLY THE MOST COMMON PROCEDURES FOR THE HEALTH SYSTEM ARE INCLUDED.

*Use prior microbiology if available to help guide patient-specific antibiotic selection; for assistance [Contact ID/stewardship via Epic Chat or page via intranet grid.](#)*

**Surgical Procedures NOT Requiring Prophylactic Antibiotics** (clean, sterile procedures)

## Clean procedures

- Breast biopsy
- Circumcision
- Elective rhinoplasty
- Elective tonsillectomy
- Elective low risk inguinal hernia repair
- Low risk gallbladder surgery (e.g.-elective laparoscopic cholecystectomy)
- Thyroidbiopsy/thyroidectomy/parathyroidectomy/lymph node biopsy
- Uncomplicated tubal ligation
- Others (colonoscopy, cardiac cath, permcath placement/removal)

**Allergies:** history must be obtained at pre-op visit when possible (e.g., before administration of anesthesia)

- **Non-severe, non-type I penicillin allergy (rash, GI upset) cephalosporin is accepted practice** (cross reactivity is low)
- **Severe, immediate, type-I, IgE mediated reactions (angioedema, anaphylaxis, bronchospasm, urticaria) an alternative regimen is recommended** (see below)

## Timing:

- Administer within 60 minutes prior to the first incision [**<30 minutes is ideal**, except vancomycin and ciprofloxacin if used - both need to be infused over **>60 minutes**].

## Restriction Policy:

\*Most regimens do **NOT** require ID approval for timely delivery except IV vancomycin; to avoid delays [Contact ID/stewardship via Epic Chat or page via intranet grid](#)

## Antibiotic re-dosing:

**Subsequent prophylactic doses should be the same as initial dose;** frequency determined by patient age, renal function, EBL in OR (see below).

- Per national SSI prevention guidelines, antibiotic continuation is not recommended for clean procedures after wound closure
- Presence of JP drains is NOT an indication to continue prophylaxis**
- Because vancomycin, aminoglycosides, ceftriaxone have long half-lives, **no re-dosing is needed.**
- See table below for re-dosing recommendations based on estimated blood loss, specific drug and duration of procedure

## \*MRSA risk factors & Indications for IV Vancomycin in cardiothoracic, neurosurgical, orthopedic procedures:

- Severe penicillin, cephalosporin allergy
- MRSA colonization/infection
- Multiple prior hospitalizations
- LTCF stay
- Hemodialysis
- Inpatient stay > 3 days (at MMC or transfer facility)

**\*Can obtain pre-op MRSA nares PCR for risk assessment if not previously documented in EPIC**

## Document rationale for:

- Procedure doesn't require prophylaxis
- Use of alternative antibiotics
- Extending prophylaxis beyond peri-op period; e.g., suspected/known surgical or other infection

## Notes:

- The **Joint Commission** and other regulatory agencies state that medication compounding must be performed by pharmacists, not in the OR.
- If infection (or asymptomatic bacteriuria for urological procedure) use culture/susceptibility to guide antibiotic selection (can call ID/ASP for assistance)
- Gentamicin vials come in 80 mg; max prophylaxis dose is 240 mg.

## Antibiotic Washes:\*

- Montefiore does not endorse washes, irrigations and soaks universally given no efficacy data to support their use. (CDC SSI guidelines. JAMA 2017)
- Antibiotic washes, irrigations, soaks are prohibited for sterile device insertion (e.g., penile implant).
- Intraop antibiotics (e.g., vancomycin, aminoglycosides) may be indicated for certain orthopedic, spine procedures where literature supports this practice and/or is the clinical standard of care

\*References available upon request

Type of Surgery	Antibiotic and Dose (options provided in the event of antibiotic shortages)	Severe Allergy/Type 1 Penicillin Hypersensitivity	Re-Dosing (same as initial dose; based on normal renal function)
<b>Cardiothoracic</b> Prosthetic valve insertion, CABG, other open-heart surgery, or pacemaker insertion	<b>Adult:</b> Cefazolin <b>2 g</b> IV ( <b>1 g</b> if <60kg; <b>3 g</b> if >120kg)  <b>Pediatric:</b> Cefazolin 30 mg/kg IV  <i>*if MRSA risk factors (see above), add IV Vancomycin 15mg/kg x 1 peri-op dose to Cefazolin</i>	<b>Adult:</b> Vancomycin 15mg/kg IV  <b>Pediatric:</b> Vancomycin 15 mg/kg IV	<p><b>Re-dose for any case with EBL &gt;1.5L at any time, otherwise, use frequency below if normal renal function; re-dosing may not be necessary for renal insufficiency</b></p> <p><b>Ampicillin-sulbactam: 2 hours</b></p> <p><b>Cefazolin: 4 hours</b></p> <p><b>Cefoxitin: 2 hours (short half-life)</b></p> <p><b>Clindamycin: 6 hours</b></p> <p><b>Oxacillin: 4 hours</b></p> <p><b>Piperacillin/tazobactam: 2 hours</b></p> <p><i>*For patients already on B-lactam antibiotics for active infection (e.g., piperacillin/tazobactam, cefepime meropenem); re-dose perioperatively if normal GFR unless prior dose given within the last 2 hours</i></p> <p><b>Only 1 peri-operative dose required (no re-dosing due to long half-life):</b></p> <p><b>Ceftriaxone</b> <b>Gentamicin</b> <b>Metronidazole</b> <b>Vancomycin</b></p>
<b>Vascular</b> Arterial surgery involving the abdominal aorta, a prosthesis, or a groin incision; leg amputation for ischemia	<b>Gentamicin for Spine**</b> 3mg/kg IV or IM (1.5 mg/kg IV or IM if CrCl <30 or HD, OR age ≥80) if multi-level instrumentation, prolonged procedures, morbid obesity, neuromuscular disease, bladder/bowel incontinence, spinal cord injury or general spine trauma	<b>Adult:</b> Vancomycin 15mg/kg IV  <b>Pediatric:</b> Vancomycin 15 mg/kg IV	
<b>Orthopedics &amp; Spine*</b> Hip and knee joint replacement, fracture repair/implantation of internal fixation devices, tendon repair, laminectomy/fusion of spine	<b>Adult:</b> Oxacillin 2 g (for device placement procedures requiring CSF penetration) <b>OR</b> Cefazolin <b>2 g</b> IV ( <b>1 g</b> if <60kg; <b>3 g</b> if >120 kg) <b>Pediatric:</b> Oxacillin 50 mg/kg IV  <i>*if MRSA risk factors (see above), add IV Vancomycin 15mg/kg x 1 peri-op dose to Cefazolin</i>	<b>Adult:</b> Vancomycin 15mg/kg IV  <b>Pediatric:</b> Vancomycin 15 mg/kg IV	
<b>Urologic</b> Transurethral surgery (e.g., TURP) , transrectal biopsy (<1hr before), urologic procedure with history prosthetic joint  Penile Implant	<b>Adult:</b> Cefoxitin <b>2 g</b> IV ( <b>3 g</b> if >120 kg) <b>OR</b> Gentamicin** 3mg/kg IV or IM (1.5 mg/kg IV or IM if CrCl <30 or HD, OR age ≥80) <b>Pediatric:</b> Cefazolin 30 mg/kg IV  Gentamicin IV 1.5-3mg/kg (see above) + Cefazolin <b>2 g</b> IV ( <b>1 g</b> if <60kg; <b>3 g</b> if > 120kg)	Gentamicin **3mg/kg IV or IM (1.5 mg/kg IV or IM if CrCl <30 or HD, OR age ≥80)  Gentamicin IV 1.5-3mg/kg (see above) + Clindamycin 10 mg/kg IV	
<b>Plastic Surgery</b> Implementation of permanent prosthetic material, or entering the oral cavity of pharynx	<b>Adult (Clean with Foreign Body):</b> Cefazolin <b>2 g</b> IV ( <b>1 g</b> if <60kg; <b>3 g</b> if > 120kg)  <b>Adult ( Head &amp; Neck Cancer OR Clean Contaminated):</b> Cefoxitin <b>2 g</b> IV ( <b>3 g</b> if >120 kg)  OR [Cefazolin <b>2 g</b> IV + Metronidazole 500 mg IV] (Cefazolin <b>1 g</b> if <60kg; <b>3 g</b> if > 120kg)	<b>Adult (Clean with Foreign Body):</b> Clindamycin 600 mg IV <b>Adult (Head &amp; Neck Cancer OR Clean Contaminated):</b> Clindamycin 600 mg IV +/- Gentamicin** 5mg/kg IV (1.5 mg/kg IV if CrCl <30 or HD, OR age ≥80). <b>Pediatric:</b> Clindamycin 10 mg/kg IV + Gentamicin 2 mg/kg IV	
<b>Head &amp; Neck/ENT</b> Involving oropharynx	<b>Pediatric:</b> Cefazolin 30 mg/kg IV		
<b>Abdominal</b> High-risk gastroduodenal, high-risk biliary tract, colorectal, appendectomy, bariatric surgery, etc.	<b>Adult:</b> Cefoxitin <b>2 g</b> IV ( <b>3 g</b> if >120 kg) <b>OR</b> Cefazolin <b>2 g</b> ( <b>1 g</b> if <60kg; <b>3 g</b> if >120 kg) + Metronidazole 500 mg IV  <b>Pediatric:</b> Ampicillin/sulbactam 50 mg/kg IV (dose based on ampicillin component)  <i>Patients already on ceftriaxone, piperacillin/tazobactam, cefepime, meropenem for active infection can continue these</i>	<b>Adult:</b> Metronidazole 500 mg IV + Gentamicin** 5mg/kg IV (1.5 mg/kg IV if CrCl <30 or HD, OR age ≥80) <b>Pediatric:</b> : Ciprofloxacin 15 mg/kg IV + Metronidazole 10mg/kg IV	
<b>Gynecologic</b> Hysterectomy	Cefazolin <b>2 g</b> ( <b>1 g</b> if <60kg; <b>3 g</b> if >120 kg) [add Metronidazole 500 mg IV if inadvertent bowel involvement] <b>OR</b> Cefoxitin <b>2 g</b> IV ( <b>3 g</b> IV if > 120 kg) [if anticipated bowel involvement]	Metronidazole 500 mg IV + Gentamicin**5 mg/kg IV (1.5 mg/kg IV if CrCl < 30 or HD, OR age ≥ 80)	

\*For LVAD, liver, kidney, lung and heart transplant, orthopedic & spine surgeries, please see service specific protocols

\*\*Dose gentamicin by ideal body weight (IBW); use adjusted body weight (ABW) if actual body weight is 120% of IBW; use actual body weight if its less than IBW. Epic calculates IBW and ABW automatically from Epic patient profile

[Contact Antimicrobial Stewardship via Epic chat or page via intranet grid for any assistance 24/7 at MMC campuses](#)